Shaping the Future of Railway

Monash University IRT 2017
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About V/Line

- V/Line is Australia's largest regional public transport operator. In 2016-17 more than 19.3 million train and coach passenger trips were taken.

- Every week, we schedule 1900 train services between Melbourne and:
  - Geelong and Warrnambool
  - Ballarat, Maryborough and Ararat
  - Bendigo, Swan Hill and Echuca
  - Seymour, Shepparton and Albury
  - Traralgon, Sale and Bairnsdale.

- V/Line branded coach services connect with the rail network and serve regional Victorian communities where trains do not operate. Some coach services also travel to South Australia, New South Wales and the Australian Capital Territory.

- In addition to being a passenger service operator, V/Line also provides access to, and maintains 3420 km of rail track used by passenger and freight rail services.

- V/Line is a major employer with a workforce of 1,776, many of whom live in regional Victoria.
Patronage continues to trend upwards

Focusing on line results, it can be seen that:

- Rolled patronage is the sum of rail and coach trips over the last 12 months. The rolled figure is used to help eliminate any seasonality.
- Over the last 12 months, there has been strong patronage growth (9%), with 19.3 million trips taken.

![Patronage - 12 month rolled](chart)
Record patronage on the south west line

- A large proportion of the increase can be attributed to sustained growth along the Regional Rail Link, with the Ballarat line up by 14 per cent and Geelong up by 13 per cent.
- The addition of more services, along with the opening of the Caroline Springs Station, have contributed to the uplift.
Four out of five trips include Southern Cross

- Southern Cross is by far our busiest station, with four out of five journeys starting or ending at Southern Cross.

- Tarneit recorded the second highest number of trips with almost 900,000.

Top 5 stations by trips

<table>
<thead>
<tr>
<th>Station</th>
<th>2016-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Cross</td>
<td>6.6m</td>
</tr>
<tr>
<td>Tarneit</td>
<td>896k</td>
</tr>
<tr>
<td>Melton</td>
<td>726k</td>
</tr>
<tr>
<td>Geelong</td>
<td>723k</td>
</tr>
<tr>
<td>Footscray</td>
<td>639k</td>
</tr>
</tbody>
</table>
Regional rail revival

- Signalling upgrades – Bendigo to Epsom
- Signalling upgrades – Bendigo to Eaglehawk
- Stabling – Ararat
- Signalling upgrades and track works – Ballarat
- Crossing loop – Boorcan to Weerite
- Signalling upgrades – Warrnambool to Waurn Ponds
- Second platform and pedestrian crossing – Waurn Ponds
- Infrastructure enabling works for new trains
- Station improvements – Warran
- Station improvements – Donnybrook
- Avon River Bridge upgrade
- Gippsland Line Upgrade
- Torquay transit corridor reservation
Ride comfort system
Ride comfort system instrumented passenger vehicle

**Broad Gauge:**
- Datalogger Cabinet
- GPS, 4G Antenna

**Internal Accelerometer**

**External Accelerometer**

**Standard Gauge:**
- Datalogger Cabinet

**Internal Accelerometer**

**External Sensors:**
- Accelerometer
- Spring deflection
- Bogie Yaw and Roll

**External Sensors:**
- Roll, Yaw, Pitch

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- Roll, Yaw, Pitch
Ride comfort system data tracking and processing

The RCS measures track and rolling stock data during the trip.

The RCS is tracked during the trip checking its health.

The trip data is downloaded at end of trip to IRT servers and automated processing is commenced.

Emails sent via automated systems including:
- Diagnostic reports
- Track high response reports.
- Ride Comfort reports

V/Line /ARTC advised of high response locations on track.

Non automated reports
- Weekly status reports
- Trending analysis
- Load spectrum data
- Specific project requests
Dual gauge turnouts
Dual gauge turnouts
Points condition monitoring
Points condition monitoring

N-R swings

R-N swings

06/09/2017 11:25:34 AEST  06/09/2017 11:58:46 AEST  06/09/2017 09:57:40 AEST
06/09/2017 11:26:14 AEST
Heat speed restriction study
Murray Basin Rail Project

**STAGE 1:** Completed June 2016
Mildura and Hopetoun rail lines – enabling and repair works.

**STAGE 2:** July 2017 to January 2018
Dunolly to Yelta, Ouyen to Murrayville, and Maryborough to Ararat – gauge conversion and upgrade works.

**STAGE 3:** March 2018 to August 2018
Maryborough to Manangatang, and Korong Vale to Sea Lake – gauge conversion and upgrade works.

**STAGE 4:** March 2018 to August 2018
Gheringhap to Warrenheip – gauge conversion and upgrade works.

**STAGE 5:** Timing to be confirmed
Warrenheip to Maryborough – gauge conversion and upgrade works.

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**Site Office**

**Project Office**

**Work crew starting points**
- Maryborough to Yelta crew 1
- Maryborough to Yelta crew 2
- Maryborough to Yelta crew 3
- Ararat to Maryborough crew
Murray Basin Rail Project benefits

• Gauge convert lines from broad to standard gauge
• All temporary speed restrictions on Mildura line planned to be removed
• Heat speed restrictions planned to be applied at 36 degrees and above
• Lines to operate at 21 tonne axle load
• Improve rail freight services and reduce the costs of freight
• Drive growth, create jobs and provide a major boost to transport and agricultural sector
• Trains will be able to carry up to 500,000 more tonnes of grain each year
• Forecast to capture approximately 20,000 journeys currently undertaken by trucks
• More than 400 people will be employed on the project at its peak
Indigenous work crew Mildura
Green track solution
Thank you for listening